

Description of three new muricid Gastropods from the South-Western Pacific Ocean with comments on new geographical data

by Roland HOUART

Abstract. — Description of *Pterynotus richeri* from Nova Seamount (305-320 m), *Muricopsis spiculus* from the Chesterfield-Bellona plateau (30-100 m) and *Muricopsis (Murexsul) ianlochi* from Taupo Seamount (154-164 m), all in the Coral Sea. The distribution area of six additional muricid species, so far known from South-East Asia, is now extended to the Coral Sea.

Résumé. — Description de trois nouveaux Gastéropodes Muricidae du Sud-Ouest Pacifique, et nouvelles données de distribution. — Description de *Pterynotus richeri* du Seamount Nova (305-320 m), *Muricopsis spiculus* du plateau Bellona-Chesterfield (30-100 m) et *Muricopsis (Murexsul) ianlochi* du Seamount Taupo (154-164 m), en mer de Corail. L'aire de distribution de six autres espèces de Muricidae, connues de l'Asie du Sud-Est, est étendue à la mer de Corail.

R. HOUART, St. Jobsstraat, 8, B-3330 Landen (Ezemaal) Belgium (Scientific Collaborator at the Institut Royal des Sciences Naturelles de Belgique).

INTRODUCTION

The central part of the Coral Sea between New Caledonia and Queensland comprises several island and reef groups (Bellona, Chesterfield, Bampton) and submerged banks, which have so far been very sparsely scientifically investigated. The area has at least two endemic gastropods, the volutes *Cymbiolacca thatcheri* and *Lyria grangeri*, which probably reflect the degree of isolation of the reef areas from surrounding land masses. The protoconch of at least one of the two new species here described from the Chesterfield area indicates non-planctonic larval development ; this species could also be a Chesterfield endemic (the protoconch is unknown in the other species).

In 1984 an expedition, under the direction of Dr. B. RICHER DE FORGES (ORSTOM, Nouméa), on board of R. V. "Coriolis", sampled benthos by dredging, trawling and scuba diving. A description of the cruise and station list was presented by RICHER DE FORGES & PIANET (1984). This report contains a list of molluscs taken during the expedition and was reproduced in GERBAULT (1985) together with a popular account of the cruise. The malacological material is now deposited in Muséum national d'Histoire naturelle, Paris.

Additional material from the same area in the Australian Museum, Sydney, revealed a new species of *Murexsul* as well as a geographical range extension for a recently described *Chicoreus* species with *Pterynotus*-like affinities.

For general references to muricid descriptions prior to 1970, the reader is referred to VOKES (1971) and RADWIN & D'ATTILIO (1976).

I. DESCRIPTION OF NEW TAXA

***Pterynotus (Pterynotus) richeri* sp. n.**

(Fig. 1-1A)

DESCRIPTION

Shell medium sized for the genus, up to 31 mm high. Aperture ovate, slightly angulate. Columellar lip erect, adherent above, smooth ; no apparent anal notch. Outer apertural lip erect and smooth. Inner part of outer lip smooth.

Spire moderately high, consisting of 6 roundly elongate postnuclear whorls.

Protoconch not known because of corrosion. Suture impressed.

Body whorl with 3 sharp varices, bearing long, slightly upward directed, pointed and webbed carinal spines. Short anterior varical flange. Spines grooved with a narrow open channel, giving raise to a rounded and strong cord on its backside. This cord extend on the whorls, bearing the only existing spiral sculpture of this otherwise smooth species. No axial sculpture but fine growth striae.

Siphonal canal long to very long for the genus ; more than 1/2 of the length of the shell for one of the paratypes ; ornamented with a cut open spine on its posterior part ; narrowly open and very slightly bent backward.

Color glossy white except for the spine channels of the holotype which show a light brown color.

MATERIAL STUDIED : Holotype MNHN. 2 paratypes MNHN, Coral Sea, Nova Seamount, Chalcal 1984, stn. D66, 22°26'40 S, 159°19'80 E, 320 m. 1 paratype HOUART coll. Coral Sea, Nova Seamount, Chalcal 1984, stn. D63, 22°11' S, 159°14'70 E, 305 m.

TYPE LOCALITY (holotype) : Coral Sea, Nova Seamount, Chalcal 1984, stn. D66, 22°26'40 S, 159°19'80 E, 320 m.

ETYMOLOGY : Named for Dr. B. RICHER DE FORGES, Chief Scientist of the Chalcal cruise.

DISCUSSION

Although closely related to *Pterynotus vespertilio* (Kuroda, 1955) (same group, with long carinal spine), this new species also resembles species belonging to the subgenus *Pterochelus* Jousseaume, 1880, as it has an open channel on the carinal spine, but this is more a superficial resemblance than a subgeneric character. The species related to *Pterochelus* have a well-developed and relatively deep median channel on the ventral surface of the carinal wing and have a siphonal canal ornamented with a protuberant frond, connected to the varical wing. *Pterynotus vespertilio* and *Pterynotus richeri* have a relatively shallow channel and a frondless canal, much closer to *Pterynotus s.s.* *Pterynotus vespertilio* is heavier, has a more elaborate varical flange, 4 to 5 obsolete spiral cords, shorter carinal spines and siphonal canal. Moreover, it has 5 to 6 low denticles on the inner side of outer apertural lip.

Pterynotus (Pterochelus) duffusi (Iredale, 1936) has shorter carinal spines, a small intervarical node and 2 spiral cords on body whorl. The shell is larger with wider aperture and a crenulate outer apertural lip. The siphonal canal is shorter with a sharp flange.

A fossil form, *Pterynotus (Pterochelus) manubriatus* (Tate, 1888), may also be compared (type material examined). The first postnuclear whorl of *P. manubriatus* has 5 varices and only from the second whorl there are 3 varices, while *P. richeri* sp. n. shows 3 varices from the first postnuclear whorl. *Pterynotus richeri* is also more slender, has a narrower aperture, longer carinal spines, and a longer and narrower siphonal canal.

Muricopsis (Muricopsis) spiculus sp. n.

(Fig. 2-2B)

DESCRIPTION

Shell small, height approximately 12 mm. Aperture ovate; columellar lip detached, briefly adherent posteriorly; it bears 1 or 2 small denticles on its anterior part or is completely smooth. Anal notch broad. Outer lip slightly erect and crenulate with 5 small elongate denticles anteriorly.

Spire high, consisting of 1 1/2 strongly keeled larval whorls and 5 angulate postnuclear whorls. Suture appressed, obscured by numerous frilly lamellae.

Body whorl with 6 low moderately sharp varices ornamented with numerous open spinelets. In some specimens the carinal and 2 or 3 anterior spinelets may be somewhat larger. No other axial sculpture.

Spiral sculpture variable, mostly consisting of 11 to 13 small scaly cords and threads, connecting the small spinelets at the varices. When the varical spinelets are longer, the spiral cords connecting these are heavier; other spiral elements are then somewhat obsolete. Both forms have the same protoconch and apical whorls. Intermediates exist.

Siphonal canal moderately short, open and slightly curved backwards, posteriorly equipped with one short open spinelet.

Color cream to light rose or dark pink, aperture of the same color.

MATERIAL STUDIED : Holotype MNHN. 1 paratype MNHN, stn D15, 19°23'30 S, 158°38'60 E, 65 m; 3 paratypes MNHN, stn D26, 19°10'72 S, 158°34'95 E, 48 m; 1 paratype MNHN stn D29, 19°30'60 S, 158°31'10 E, 100 m; 2 paratypes MNHN, stn D46, 20°52'26 S, 158°33'64 E, 65 m; 1 paratype stn D47, 20°50'85 S, 158°36'03 E, 70 m; 1 paratype R. HUART coll., stn D47, 1 paratype National Science Museum, Tokyo, NSMT-M064108, stn D47; 1 paratype National Museum New Zealand, MF47618, stn D47; 1 paratype Natal Museum, Pietermaritzburg, K1529/T3365, stn D50, 21°04'40 S, 158°40'70 E, 70 m; 1 paratype USNM, Washington, USNM 859078, stn D50; 1 paratype MNHN, stn D51, 21°13'21 S, 158°42'50 E, 55 m; 1 paratype MNHN, stn D56, 21°24'40 S, 159°08'80 E, 60 m; 1 paratype MNHN, stn D57, 21°29'50 S, 159°16'40 E, 62 m; 1 paratype Australian Museum, Sydney, C150075, stn D59, 21°40'36 S, 159°21'29 E, 56 m; 1 paratype MNHN, stn D61, 21°42'40 S, 159°29' E, 50 m.

TYPE LOCALITY (holotype) : Coral Sea, Chesterfield-Bellona Plateau, Chalcal 1984, stn D24, 19°10'78 S, 158°37'10 E, 30 m.

DISCUSSION

Only 2 species resemble *M. spiculus* : *Murex radula* Hedley, 1899, a muricid with doubtful generic placement but generally accepted as a *Muricopsis*, has *fide* HEDLEY (1899 : 459) a protoconch consisting of 3 conical, glossy and smooth whorls and, thus, is probably not a *Muricopsis*.

The second species, *Murex infans* Smith, 1884 (type material examined), is only superficially similar, belonging to the Ergalataxinae, a subfamily being studied by Dr. VOKES ; it is smaller, has a shorter siphonal canal and shows lirae into the aperture instead shallow knobs. The aperture is also more elongate and there are no apparent spinelets on the varices. The spiral sculpture is heavier with fewer cords.

Muricopsis (Murexsul) ianlochi sp. n.

(Fig. 8-8B)

DESCRIPTION

Shell ovate and spiny, medium-sized for the subgenus, up to 37 mm in height. Aperture ovate, somewhat angulate. Columellar lip smooth and wide, completely erect ; no apparent anal notch. Outer lip irregularly crenulated, interior smooth.

Spire high and acute, consisting of 1 3/4 small and angulate nuclear whorls and 6 to 7 somewhat angulate postnuclear whorls. Suture slightly appressed.

Body whorl with 6 to 7 low varices with 2 to 4 long, upward pointed and open spines. Carinal spine longest, followed by a shorter one, sometimes obsolete or totally missing ; third spine somewhat shorter than the carinal ; fourth and last spine varying from small to moderately long.

Spiral sculpture consisting of numerous squamous cords and threads of various size. Shoulder with 3 to 4 small spiral threads. Spiral sculpture of spire whorls consisting of 6 to 8 cords. Only the carinal spine is obvious on the early whorls.

Siphonal canal moderately short, slightly bent backwards, almost without sculpture except one spiral cord, giving rise to a row of moderately long and straight open spines.

Color of the shell and aperture uniformly white.

MATERIAL STUDIED : Holotype n° C139620, Australian Museum, Sydney. 2 paratypes n° C139620, AMS ; 1 paratype, MNHN.

TYPE LOCALITY : Taupo Seamount, off New Castle, N.S.W., Australia, 7 Oct. 1982, 33°06' S, 159°09' E, 154-164 m. R. V. "Tangaroa", stn U212, coll. W. F. PONDER and R. SPRINGTHORPE. Only known from the type locality and from 2 other near by localities, in depths from 137 to 164 meters.

ETYMOLOGY : Named for Mr. Ian LOCH, collection manager, department of Malacology at the Australian Museum, Sydney, to whom I wish to express my thanks for his kindness and continuous valuable help.

DISCUSSION

The placement of the new species in this subgenus is questionable, but the lack of soft parts made it impossible to study the radula and thus, to determine if the muricopsine subgenus *Murexsul* is more appropriate than the muricine *Paziella* Jousseau, 1880, or *Attiliosa* Emerson, 1968.

In fact, it has features of the three : the ribbed first whorls, the squamous ornamentation and the smooth aperture are features in common with *Murexsul*, although the type-species of this subgenus : *Murex octogonus* Quoy and Gaimard, 1833, has a striate inner side of the outer lip.

The general form and the somewhat squamous spiral cords suggests a position in the muricine *Attiliosa*. However, the inner side of the outer apertural lip of *Attiliosa* has strong denticles or ribs and it usually has a spineless and shorter siphonal canal.

Paziella has a very similar shape with a row of spines on the siphonal canal in the type-species, *Murex pazi* Crosse, 1869, but *Paziella* has smooth pointed spines, not squamous as in the new species ; it has small denticles on the inner side of outer lip ; the shell is almost smooth, with weak spiral sculpture and the first whorls show small pointed flange-like varices, not ridges, as in the new species (E. H. VOKES, *in litt.*).

The choice of the subgenus *Murexsul* is based on the shell characters but, of course, later study of the radula may contradict this choice. One fossil species from the Miocene of New Zealand should be compared. *Muricopsis (Murexsul) clifdenensis* (Finlay, 1930) differs by having polygyrate protoconch, of at least three smooth conical whorls (FINLAY, 1930) and is a stouter shell with only short carinal spines.

Three species, one recent and two fossil forms, assigned to the subgenus *Paziella*, are somewhat similar in appearance.

Latiaxis sibogae Schepman, 1911, recently assigned to *Poirieria (Paziella)* (HOUART, 1986 : 435) is superficially similar to the new species, but is about half the size, with the same number of postnuclear whorls ; it has axial lamellae and a more impressed suture. The absence of any new material for *P. (P.) sibogae* since its description made it impossible to study soft parts and thus, *Paziella* may be considered as a tentative subgenus for this species. Certainly, its classification as a Coralliophilidae seems very doubtful. KOSUGE & SUZUKI (1985 : pl. 17, fig. 1 ; pl. 34, fig. 9) illustrate under this name a recently found specimen, which seems to be a larger and more spiny species of true Coralliophilidae.

Poirieria (Paziella) eyrei (Tenison-Woods, 1877) has a twice as large bulbous protoconch, fewer spiral cords on the early whorls and more regular and uniform spiral cords on the body whorl. It has only carinal spines, none on the body ; the axial sculpture is less prominent and rounded ; the siphonal canal is spineless.

Poirieria (Paziella) legrandi (Johnston, 1880) has a protoconch of 1 1/2 rounded nuclear whorls and 5 postnuclear whorls. It has a broader shell with only 4 equi-sized spiral cords on the body whorl and 2 on the early whorls ; it has no spiral sculpture on the shoulder and an almost spineless siphonal canal.

II. NEW GEOGRAPHICAL DATA

Chicoreus (Chicoreus) nobilis Shikama, 1977

(Fig. 3)

Chicoreus nobilis Shikama, 1977 : 14, pl. 2, figs. 9a, b ; pl. 5, fig. 1.

MATERIAL : Coral Sea, Chalcal 1984, stn CP2, 20°31'50 S, 161°06'45 E, 88 m ; stn D2, 21°14'41 S, 162°16'27 E, 80-120 m ; stn D9, 20°44'50 S, 161°02' E, 75 m ; stn D17, 19°11'90 S, 158°55'80 E, 44 m ; stn D19, 19°06'73 S, 158°41'75 E, 60 m ; stn D40, 20°31'70 S, 158°50'90 E, 65 m ; stn D50, 21°04'40 S, 158°40'70 E, 70 m ; stn D52, 21°13'40 S, 158°49'20 E, 69 m ; stn D62, 21°46'60 S, 159°30'70 E, 40 m. — 9 specimens of which 5 live taken (all MNHN).

This species was till now only known from the Philippine Islands.

Chicoreus (Chicomurex) laciniatus (Sowerby, 1841)

(Fig. 4)

MATERIAL : Coral Sea, Chalcal 1984, stn CP1, 21°45'80 S, 161°02'50 E, 70 m ; stn CP13, 20°50'96 S, 158°36'62 E, 70 m ; stn D40 ; stn D55, 21°23'90 S, 158°59'60 E, 55 m. — 5 specimens of which 3 live taken (all MNHN).

The somewhat more elongate spire, the different color of shell and aperture could lead to a misidentification but examination of various material confirmed *Chicoreus laciniatus* as a wide-spread and variable species.

I have had the opportunity to examine specimens from off Queensland, Australia and even though, like this one, they differ somewhat from the typical form found in the Philippines, the protoconch, first whorls, axial and spiral sculpture are the same.

The specimen here illustrated is white with some pale brown traces, the columella is dark pink.

Pterynotus (Pterynotus) aparrii D'Attilio and Bertsch, 1980

(Fig. 5)

Pterynotus aparrii D'Attilio and Bertsch, 1980 : 172, fig. 2.

MATERIAL : Coral Sea, Fairway Reef, Chalcal 1984, stn D2, 21°14' S, 162°16' E, 80-120 m, 1 shell (MNHN).

Described from the Philippine Islands, Cebu. This represents an extension of range. The only specimen found is pale orange with pale pink aperture, typical for the species.

(?) *Pterynotus (Pterynotus) martinetana* (Röding, 1798)

(Fig. 6)

MATERIAL : Coral Sea, Chesterfield-Bellona Plateau, Chalcal 1984, stn D51, 21°13' S, 158°43' E, 55 m, 1 shell (MNHN).

This widely distributed species is known from the Red Sea to the Philippines and has not been reported from this area previously.

Favartia (Murexiella) leonae D'Attilio and Myers, 1985

(Fig. 7)

Favartia (Murexiella) leonae D'Attilio and Myers, 1985 : 60, figs. 7-11.

MATERIAL : Coral Sea, Fairway Reef, Chalcal 1984, stn D2, 21°14' S, 162°16' E, 80-120 m, 1 shell (MNHN).

Described from Okinawa Islands, Japan and Bohol Straits, Philippine Islands. The Coral Sea is now added to its geographical distribution.

Chicoreus (Chicoreus) orchidiflorus (Shikama, 1973)

(Fig. 9-9B)

Pterynotus orchidiflorus Shikama, 1973 : 5, pl. 2, figs. 7, 8.

MATERIAL : Off New Caledonia, 20°16' S, 169°51' E, 85-100 m, dredged 12 May 1971, HMAS "Kimbla", stn K4.71.9, coll. P. H. COLMAN and J. PAXTON, 2 shells (AMS).

After the discovery of a single specimen from Tubuai Island (HOUART, 1986 : 429, pl. 4, fig. 15) it is not surprising to find this species occurring also off New Caledonia. The shells were dredged dead at approximately 100 meters depth, but this species is caught in tangle nets, from deep water in the Philippine Islands (LEEHRMAN, 1980 : 11) and the Tubuai specimen was dredged alive, from 150 meters depth. The rounded and more frondless varices make it look somewhat different from the typical form. Protoconch, axial and spiral sculpture, aperture and ornamentation of siphonal canal are the same for both forms. It is here illustrated with a specimen from the Philippines for comparison.

Other muricids dredged from the Chesterfield-Bellona Plateau were not unexpected in that region and include : *Murex (Haustellum) haustellum* Linné, 1758 ; *Chicoreus (Chicoreus) banksii* (Sowerby, 1841) ; *Chicoreus (Chicoreus) microphyllus* (Lamarck, 1816) ; *Chicoreus (Chicoreus) ramosus* (Linné, 1758) ; *Favartia (Favartia) garrettii* (Pease, 1868) and *Vitularia miliaris* (Gmelin, 1791).

One additional *Chicoreus* species and one presumed *Muricodrupa* species are requiring further study by the author. Ergalataxinae are being studied separately by Dr. VOKES (Tulane University).

Acknowledgements

My thanks go to Dr. Ph. BOUCHET (MNHN, Paris) and to Dr. W. F. PONDER (Australian Museum, Sydney) who both gave me the opportunity to study this material, and to Dr. E. H. VOKES (Tulane University) for her very useful and welcome advice and for reading the manuscript. I am also very grateful to Dr. N. PLEDGE (South Australian Museum, Adelaide) who was of very great help in sending me TATE's type material on loan, and to Ms. K. WAY (British Museum, Natural History) for the loan of the type of *Murex infans* Smith, 1884.

REFERENCES

- D'ATTILIO, A., & H. BERTSCH, 1980. — Four species of *Pterynotus* and *Favartia* (Moll. Gastr. Muricidae) from the Philippine islands. *Trans. S. Diego Soc. nat. Hist.* : 169-179.
- D'ATTILIO, A., & B. W. MYERS, 1985. — Two new species of *Favartia* from the West Pacific Ocean (Gastr. : Muricidae). *The Nautilus*, **99** (2-3) : 58-61.
- FINLAY, H. J., 1930. — New Shells from New Zealand Tertiary beds, pt. 3. *Trans. Proc. N. Z. Inst.*, **61** : 49-84, pls. 1-6.
- GERBAULT, A., 1985. — Chalcal 1984 aux îles Chesterfield du 12 au 30 juillet 84. *Rossiniana*, **26** : 9-10.
- HEDLEY, C., 1899. — The Mollusca of Funafuti, pt. 1, Gastropoda. *Mem. Aust. Mus.*, **3** : 397-488.
- HOUART, R., 1986. — Mollusca : Gastropoda : Notewhorthy Muricidae from the Pacific Ocean, with description of seven new species, in : Résultats des Campagnes MUSORSTOM I & II. Philippines (1976, 1980). *Mém. Mus. natn. Hist. nat., Paris*, **133** : 427-455, pl. 1-5 (issued 31 March 1986).
- KOSUGE, S., & M. SUZUKI, 1985. — Illustrated catalogue of *Latiaxis* and its related groups. Family Coralliophilidae. Institute of Malacology, Tokyo, Special publication n° 1 : 1-83, pls. 1-50.
- LEEHRMAN, E. G., 1980. — From Philippine Bottom Nets. *Hawaii. Shell News*, **28** (10) : 11.
- RADWIN, G. E., & A. D'ATTILIO, 1976. — *Murex* shells of the World, an illustrated Guide to the Muricidae. Stanford, 284 p., 32 pls.
- RICHER DE FORGES, B., & R. PIANET, 1984. — Résultats préliminaires de la Campagne Chalcal à bord du N. O. « Coriolis » (12-31 juillet 1984). Rapports Scientifiques et Techniques n° 32. ORSTOM, Centre de Nouméa.
- SHIKAMA, T., 1973. — Description of new marine Gastropoda from the East and South China seas. *Scient. Rep. Yokohama nat. Univ.*, Sect. II, **20** : 1-8, pls. 1-2, 2 text figs.
- 1977. — Descriptions of new and notewhorthy Gastropoda from Western Pacific and Indian Oceans. *Scient. Rep. Yokohama nat. Univ.*, Sect. II, **24** : 9-23, pls. 1-5, 1 text fig.
- VOKES, E. H., 1971. — Catalogue of the genus *Murex* Linné (Mollusca : Gastropoda) Muricinae, Ocenebrinae. *Bull. Am. Paleont.*, **61** (268) : 1-141.

FIG. 1-5.

- 1-1A. — *Pterynotus (Pterynotus) richeri* sp. n., holotype, 28 × 25 mm.
- 2-2B. — *Muricopsis (Muricopsis) spiculus* sp. n. : 2, holotype, 11 × 6.5 mm ; 2A, paratype MNHN, 11.9 × 6 mm ; 2B, protoconch. × 26.
3. — *Chicoreus (Chicoreus) nobilis*, Fairway Reef, 30.5 × 17.5 mm.
4. — *Chicoreus (Chicomurex) laciniatus*, Chesterfield-Bellona Plateau, 38.5 × 22.2 mm.
5. — *Pterynotus aparrii*, Fairway Reef, 20.6 × 12.5 mm.

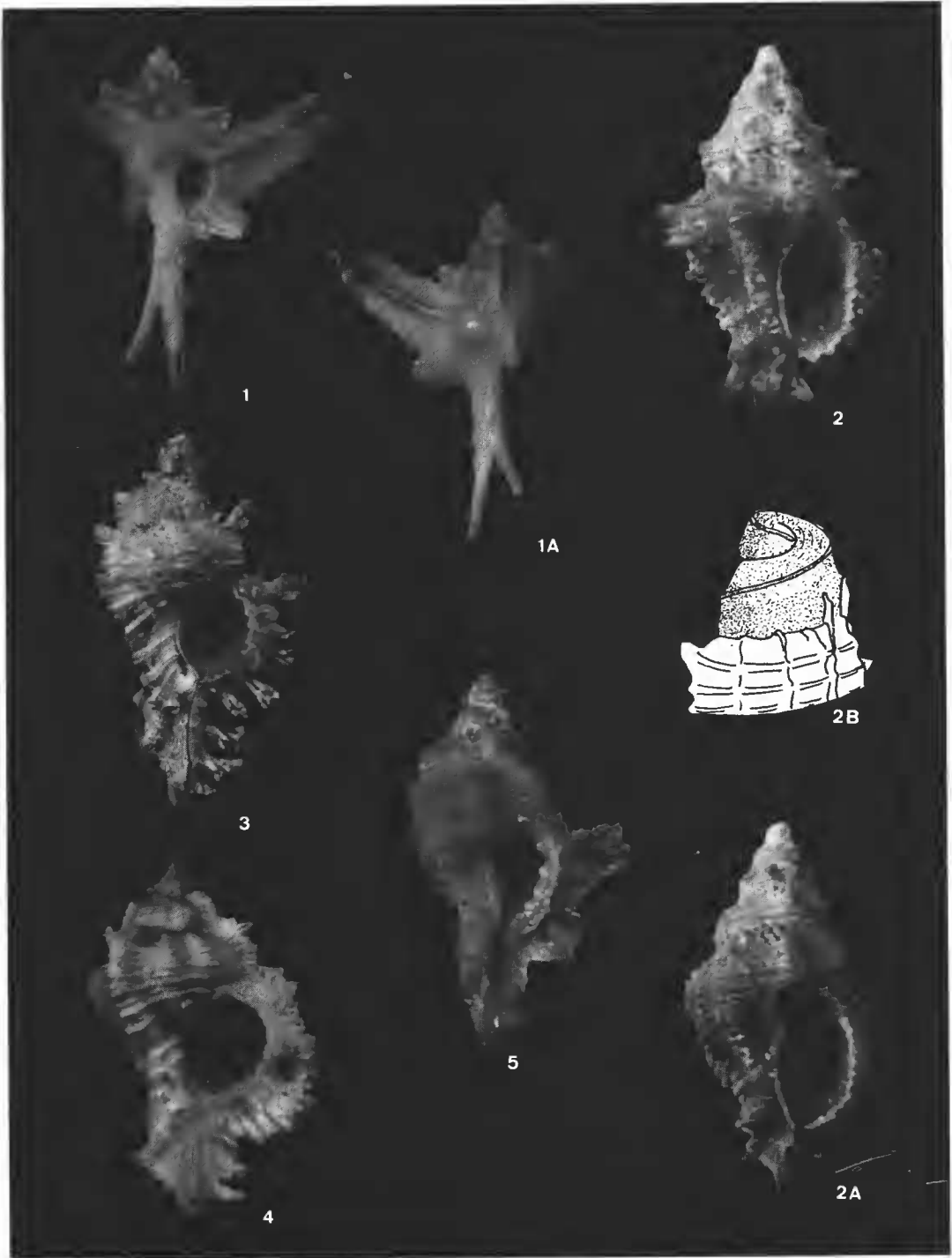


FIG. 6-9B

6. — *Pterynotus martinetana*, Chesterfield-Bellona Plateau, 18.6 × 12.7 mm.
7. — *Favartia (Murexiella) leonae*, Fairway Reef, 15 × 11.5 mm.
8-8B. — *Muricopsis (Murexsul) ianlochi* sp. n. : 8, holotype AMS, 36.1 × 24 mm ; 8A, paratype AMS, 29.1 × 18.9 mm ; 8B, protoconch. × 26.
9-9B. — *Chicoreus (Chicoreus) orchidiflorus* : 9, Philippine Islands, R. HOUART coll., 39.1 × 26 mm ; 9A, off New Caledonia, AMS C147586, 24 × 11.8 mm ; 9B, protoconch of 9A. × 24.

